

West Lakes



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Los Alamos Technical Associates, Inc.
(Pacific Northwest Office)
8633 Gage Blvd.
Kennewick, WA 99336

Fax Number: (509)783-9661
Verification Number: (509)783-4369

DATE: 6/27/94NO. OF PAGES TO FOLLOW: 9TIME SENT: 4:45 A.M. (P.M.) PJTPLEASE DELIVER TO: Diana NewmanORGANIZATION: EPAFAX NUMBER: 913-551-2887 7083FROM: Robb LongORGANIZATION: LATA/PNOREMARKS: Response to MDOH comments - WLL

913-551-7387



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Los Alamos Technical Associates, Inc.

8633 Gage Blvd. / Kennewick, WA 99336 / Telephone (509) 783-4369 / FAX (509) 783-9661

June 27, 1994

Robin Rodriguez
c/o Sverdrup Environmental Inc
13723 Riverport Dr.
Maryland Heights, MO 63043

RE: LATA review of West Lake Landfill Workplan - MDOH Comments of April 15, 1994

Dear Robin;

This letter accompanies my review of Missouri Department of Health (MDOH) comments concerning the West Lake Landfill RI/FS workplan. I have already mailed a copy to Diana Newman at EPA. I informed her that we may want to refine some portions after Sverdrup has had a chance to review the document.

Please call me at 509-783-4369 if you have any questions.

Yours truly,

A handwritten signature in black ink, appearing to read "R. Lowy", is written over the typed name.

Robert Lowy
Program Manager
LATA West Lake Landfill RI/FS

cc: SV109 files



Los Alamos Technical Associates, Inc.

8633 Gage Blvd. / Kennewick, WA 99336 / Telephone (509) 783-4369 / FAX (509) 783-9861

June 27, 1994

Diana Newman
c/o USEPA Region VII
726 Minnesota Ave
Kansas City, KS 66101

RE: LATA review of West Lake Landfill Workplan - MDOH Comments of April 15, 1994

Dear Ms Newman,

This letter accompanies the LATA review of MDOH comments concerning the West Lake Landfill RI/FS. I am sending this same package to Robin Rodriguez at Sverdrup. Ms. Rodriguez may have some questions concerning the text which may require rewrites of some portions.

In our conversation of June 24, you asked me to research several points pertaining to the March 23, 1994 set of evaluation comments that LATA submitted for your review. The answers to your inquiries follow:

o Additional Clarification for Comment #14.

Text on page 3-15 of the workplan states that "Forty-six monitoring wells have been installed in and around the Site...Table 3-2 summarizes the well construction details for the monitoring wells."

A review of Table 3-2 disclosed a discrepancy with this statement. The table lists 56 wells with the following status remarks:

- 37 wells have no status comments
- 9 wells have been abandoned
- 4 wells are missing
- 6 wells have some sort of construction flaw

I am unable to determine why 46 wells were identified in the text.

o Response to Comment 58d - Soil Sampling Below the Groundwater Surface

The prepared response to Comment 58c stated "Collection and analysis of soil samples below the groundwater surface within the alluvial aquifer is not planned at this time." My reply indicated that this statement, if taken out of context, would be misleading as soil samples from up to 10 feet below the groundwater table will be collected during the monitoring well installation phase.

I spent some time searching through the workplan text but could not find this phrase reproduced. Apparently, McLaren only included the statement in the comment responses.

c Response to Comment 58d - Refuse Characterization

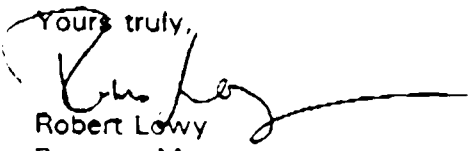
Withdraw explanation (second sentence) of why I questioned inclusion of refuse characterization (thinking analysis) in the **second** version of the workplan.

d Response R-5 - Wells exhibiting radiological contamination

My comment, R-5, referred to wells on landfill property at the extreme southern end of the site. Specific instances are evidence of radiological contamination in (1990-1991) water samples from wells # D-89, S-75, MW-F2 (Figure 3-23) and (1986) water samples from wells # D-81, S-54, I-56, and S-88. Wells MW 106 and MW 107 complete the "picture" of anomalous groundwater conditions in these southern areas.

Please call me at 509-783-4369 if you have any questions.

Yours truly,



Robert Lowy

Program Manager

LATA/West Lake Landfill RI/FS

cc: SV109 files

**WEST LAKE LANDFILL RI/FS
REVIEW OF MISSOURI DEPARTMENT OF HEALTH COMMENTS
REGARDING RI/FS WORKPLAN**

MDOH Comment	LATA Evaluation
<p>1. Section 3.3.2.2, page 3-40, second paragraph. This paragraph states that surface water runoff is not expected to mobilize contaminants ... a severe, prolonged rainfall may lead to erosion of soil cover in the lower elevations of Area 1... mobilizing contaminants beneath Area 2.</p>	<p>This comment does not require an answer. MDOH has interpreted the workplan statement accurately. One might observe that control of soil erosion, and surface water runoff/runoff will be addressed under the feasibility study according to Table 7-5, page 1 of 7, Soils, Containment.</p>
<p>2. Section 3.8.1.2, page 3-46, fourth paragraph. This paragraph states that elevated radionuclide concentrations were detected in an area south and west of northwest berm...seem to be caused by surface water erosion.</p>	<p>See evaluation of MDOH comment #1.</p>
<p>3. Section 3.8.1.2, page 3-47, third paragraph. This paragraph states that 61 surface soil samples taken by RMC were analyzed for U-238, Ra 226, Ra-223, Pb-211, and Pb-212...Because Pb-211 has such a short half-life, less than 0.1% would remain after 10 half-lives (Pb-211, 6 hours, 1 minute)...it is not a decay chain product of either the uranium or thorium series, one would not expect to detect it.</p>	<p>The presence of Pb-211 and Ra-223 would indicate the Actinium Series (long-lived parent of this chain is U-235). Though the daughter radionuclides are short-lived ($T_{1/2}$ = 36.1m and 11.4d, respectively), they would be present in the sample if the Actinium Series is present. This is analogous to measuring U-238 and Ra-226 for the Uranium Series and Pb-212 for the Thorium Series.</p>

MDOH Comment	LATA Evaluation
<p>4. Section 3.8.2.2, page 3-54, fourth paragraph. Dames and Moore sampled monitoring wells 101 through 107 for radiological constituents during their Phase II investigation. This paragraph states that unfiltered samples...met the criteria for gross alpha (15 pCi/L) except for monitoring wells 103, 105, 106, and 107. Monitoring well should be included with these as it tested at 21 Pci/L (see Table 3-4). It also states that all unfiltered samples met the criteria for gross beta. This is incorrect. Table 3-4 indicates that monitoring wells 104, 106, and 107 exceeded the gross beta criteria of 50 pCi/L, testing at 69, 59, and 58 pCi/L, respectively.</p>	<p>MDOH has incorrectly interpreted that Table 3-4 is a reproduction of Dames and Moore data. Data tables in the Phase II report support the statements of this paragraph (sample 104U at 11.4 pCi/L as alpha does not exceed the 15 pCi/L criteria and no well samples exceed the beta criteria). This information is supplied on Table 10C of the Phase II report.</p> <p>In defense of MDOH, the statement in the workplan does not reference all sources used in compiling Table 3-4. This omission should be addressed to avoid future confusion.</p>
<p>Section 4.4.3, page 4-10, second paragraph. This paragraph states that terrestrial species' contact with contaminated soil would be limited to areas of slope failure or isolated areas of loss of soil cover integrity. This is not necessarily true. A burrowing species may contact contaminated soil present beneath the surface.</p>	<p>MDOH comments are accurate and should be addressed by the workplan. Moreover, biointrusion activities could directly affect human receptors. The soil materials brought to the surface by burrowing activities are free to be dispersed by wind.</p> <p>The development of intrusion barriers against human, animal, and vegetative activity should be included in remedial actions described in the forthcoming feasibility study.</p>
<p>6. Section 4.5, page 4-12, Table 4-3. Please provide a rationale for omitting air as an environmental medium of concern for the general public. In addition, please provide a rationale for omitting soils/sediments as an environmental medium of concern for ecological receptors.</p>	<p>The workplan explains the rationale for down-playing the importance of contaminant migration via resuspended soil in the last 3 paragraphs of page 4-13. This explanation is reasonable.</p>

MDOH Comment	LATA Evaluation
<p>Section 5.2.1.4, page 5-5, fourth paragraph. This paragraph states that two potential air contaminant concerns have been identified at the site - radon gas and landfill gas. There is a third potential concern - entrainment of contaminants in fugitive dust.</p>	<p>Agree. The air monitoring section should introduce a discussion of air monitoring for fugitive dust. LATA has also raised this concern in Comment R-6, Table 2, LATA review of workplan submitted March 23, 1994.</p>
<p>Section 5.3.2, page 5-15, Table 5-4 (p. 1 of 2). The units shown are incorrect. Units for soil should be mg/kg and the units for water should be ug/L. The units for radionuclides shown on page 5-16 (p. 2 of 2) are correct.</p>	<p>Agree.</p>
<p>Section 5.3.2, page 5-15 and 5-16, Table 5-4. Reporting limits for several contaminants...are above the calculated PRG...Please provide a rationale for reporting limits exceeding PRGs.</p>	<p>The last sentence on page 5-14 explains that reporting limits are based on PRGs, as well as background data and the "application of commonly used analytic techniques". This statement should be rewritten with the MDOH comment in mind.</p>
<p>10. Section 6.0, page 6-1, second paragraph. This paragraph states that the planned investigation is designed to be completed in one field mobilization...background values have been reported for only two of five radionuclides in soil and only one in water. Please provide background levels for the remaining radionuclides of concern.</p>	<p>Section 6.0 presents an adequate discussion of the lack of background data and the strategy for supplementing the existing database as the investigation proceeds. Part of the strategy includes the preparation of a separate plan for defining baseline conditions. This explanation and commitment appears to be satisfactory.</p>
<p>Section 6.0, page 6-4, Table 6-1 (p. 3 of 3). Air sampling for contaminants (including radionuclides) in fugitive dust should be added under the Action column for Air/Landfill Gas.</p>	<p>Agree. See response to MDOH Comment #7.</p>
<p>Section 6.2, page 6-8, third paragraph. This paragraph states implies [sic] ion chamber instruments must be left in place 20 to 60 minutes before stable readings can be obtained/. This is incorrect. Portable, hand-held ion chambers typically can provide indication of radiation levels in 20 to 40 seconds.</p>	<p>Agreed. Portable Reuter-Stoke PICs stabilize in as little as 3 to 5 minutes.</p>

to 7/10/94

MDOH Comment	LATA Evaluation
<p>13. Section 6.2, page 6-8, fourth paragraph. This paragraph states that cross-calibration of the NaI detector with a pressurized ionization will permit the translation of NaI detector results (counts to minute) to gamma exposures (micro-R per hour). Pressurized ion chambers can operate at higher voltages and therefore are inherently more stable, but typically cannot detect radiation in the micro-R range. Please explain how this is to be accomplished.</p>	<p>This statement is incorrect. portable ion chambers can detect radiation in the micro-R range. This is the most common use for these instruments. The comment about higher voltages makes no sense.</p>
<p>14. Section 6.2, page 6-8, fourth paragraph. This paragraph states that cross-calibration measurements will be made at up to three known "hot spots". Based on the size of Areas 1 and 2, this may not be adequate to determine a reliable conversion factor...The variability in isotopic distribution and depth of the contamination could result in a conversion factor that would cause an over- or underestimation (of) the true gamma radiation levels...Calibrating only at the high end may make the instrumentation under respond.</p>	<p>LATA feels that the methodology utilizing the "three hot spots" is acceptable. This methodology is not likely to lead to significant over- or underestimation of the true gamma radiation levels.</p>
<p>15. Section 6.2, page 6-8, fourth paragraph. This paragraph states...the NaI detector is much more energy dependent than the ion chamber. The output of a NaI detector when used with a count rate meter has nothing to do with the energy of the incident radiation, i.e. is energy independent...Over a wide range of energies, the ion chamber will indicate the true gamma exposure in air.</p>	<p>Disagree. The response of a NaI detector is always energy dependent, whereas the ion chamber will indicate the true gamma exposure in air.</p>
<p>16. Section 6.3.4, page 6-17, first paragraph. This paragraph states...the relationship between cpm and exposure rate of about 30 cpm/uR/hour...only holds true for Cs-137.</p>	<p>Agree.</p>

MDOH Comment	LATA Evaluation
17. Section 6.3.4, page 6-17, second paragraph. This paragraph states that the only radionuclide that cannot be quantified by gamma spectrometry is Th-230, which is not a gamma emitter. Quantification of Th-230 levels could be performed using alpha spectroscopy.	LATA feels that it is impractical to quantify Th-230 levels in the field. The workplan correctly states that Th-230 cannot be quantified by gamma spectroscopy. However, the application of Alpha Spectroscopy is not a practical field technique.
Section 6.4, page 6-20, fifth paragraph. This paragraph states that some monitoring well locations may change based on the overland gamma survey. Please explain.	No comment appropriate. Please provide MDOH with explanation.
Section 7.2.3, page 7-28, Table 7-3A (page 1 of 5). The table shows cobalt as having an MCL of 5 ug/L. What is the source of this MCL?	No comment appropriate. Please provide source of MCL.
Section 7.2.4, page 7-39, first paragraph. this paragraph states that promulgated criteria, advisories or guidance...may be considered in determining clean up levels...[Missouri] plans on re-proposing...Any-Use Soil Levels (ASLs) in the near future; therefore Missouri's ASLs should be retained as To Be Considered (TBC).	The ASLs should be included in the text as TBC, as they are relevant.
Sampling and Analysis Plan	
21. Section 3.2.2, page 3-4, first and second paragraphs. See comments #12, #13, #14, and #15 above.	See previous evaluation of these comments.
22. Section 3.3.8, page 3-13, second paragraph. See comment #17.	See previous evaluation of comment #17.
Quality Assurance Plan	

MDOH Comment	LATA Evaluation
<p>Section 3.4, page 3-3, second paragraph. This paragraph states that surface water sampling will be performed at the North Water Body...Section 6.8...states that surface water sampling will be performed at other low-lying water drainage retention ponds as well. Please clarify this discrepancy.</p>	<p>Agree. The Quality Assurance Plan fails to mention the surface water samples collected from locations other than the "North Water Body".</p>
Site Safety and Health Plan	
<p>Section 3.4, page 3-6, Table 3-3 (p. 1 of 5). It should be noted that the Permissible Exposure Limit (PEL) of 1.25 rem/quarter for radioactive material only applies to individuals who have received radiological training to minimize their exposure and includes both external and internal exposures.</p>	<p>No comment.</p>

